# SANTA ANA RIVER BENEFICIAL USE SURVEY

## INTRODUCTION AND BACKGROUND

The Santa Ana River – Reach 3 and its Chino Basin tributaries (Chino Creek, Mill/Cucamonga Creek, and Prado Park Lake) are listed as impaired by pathogens on the federal Clean Water Act (CWA) 303(d) list. These surface water bodies lie within the jurisdiction of the Santa Ana Regional Water Quality Control Board (Regional Board). Because these water bodies are listed as impaired, the Regional Board must develop and adopt Total Maximum Daily Loads (TMDLs) for pathogens in these subject water bodies.

Managing pathogen levels in water bodies is a unique and complex issue. Pathogens are living organisms such as viruses, bacteria, and protozoa that can cause disease, sickness, other adverse physical reactions, and even death in humans. Children, the elderly, and immune–compromised individuals are more vulnerable than healthy adults. Pathogens do not behave or act like typical chemical compounds. Since they are living organisms, they live, reproduce and die off. In addition, their distribution may not be consistent throughout a body of water because many organisms tend to congregate in colonies or groups.

Since there are so many different kinds of pathogens, it would be rather expensive to attempt to monitor for all the various organisms. Consequently, pathogen levels are monitored based on concentrations or densities of representative organisms commonly termed bacterial indicators. Based upon studies conducted in the past, concentrations of certain bacterial indicators in water correlate better with sickness rates than others. In the past, total coliform and fecal coliform bacteria were the most widely accepted and used bacterial indicators. More recent studies indicate that Escherichia Coliform (E. Coli) and Enteroccus bacteria correlate better with sickness rates than total or fecal coliform. In addition, their concentrations in water are measured just as easily. USEPA has required that, by April 2004, Coastal States adopt new criteria for evaluation of pathogens in water based upon E. Coli and Enterococcus levels. Significant factors that must be considered when adopting the new criteria are the extent, frequency and amount of use a specific water body is subject to. Consequently, as part of

the TMDL and criteria development processes, the Regional Board and other water resource management agencies have decided to collect field data to estimate the extent, frequency, and amount to which the Santa Ana River and its Chino Basin tributaries are used by people. This Santa Ana River Beneficial Use Survey (SARBUS) is the outcome of that decision.